

**NOISE REDUCTION TECHNIQUE FOR TRANSISTORS AND SMALL
DEVICES UTILIZING AN EPISODIC AGITATION**

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ABSTRACT OF THE DISCLOSURE

10 The present invention presents methods for reducing the amount of noise inherent
in the reading of a non-volatile storage device by applying an episodic agitation (e.g. a
time varying voltage) to some terminal(s) of the cell as part of the reading process.
Various aspects of the present invention also extend to devices beyond non-volatile
memories. According to one aspect of the present invention, in addition to the normal
voltage levels applied to the cell as part of the reading process, a time varying voltage is
applied to the cell. A set of exemplary embodiments apply a single or multiple set of
alternating voltages to one or more terminals of a floating gate memory cell just prior to
or during the signal integration time of a read process. In other embodiments, other
15 reproducible external or internal agitations which are repeatable, and whose average
effect (from one integration time to the next integration time) remains sufficiently
constant so as to have a net noise reduction effect is applicable.